

COMMITTEE ON GENETICS, GENOMICS & SYSTEMS BIOLOGY - COMPUTATIONAL BIOLOGY TRACK: SUGGESTED SPECIALIZATIONS

	AUTUMN QUARTER		WINTER QUARTER		SPRING QUARTER	
		Course #		Course #		Course #
POPULATION GENETICS & EVOLUTION	Statistical Theory and Methods	STAT 24200	Fundamentals of Computational Biology: Models and Inference	HGEN 48600	Fundamentals of Computational Biology: Algorithms and Applications	HGEN 48800
	Human Genetics I	HGEN 47000	Principles of Population Genetics I	ECEV 35600	Human Variation & Disease	HGEN 46900
	Genetic Analysis of Model Organisms	MGCB 31400	Evolution of Biological Molecules	ECEV 31100	Pattern Recognition	STAT 24610
	Fundamentals of Cell and Molecular Biology	BIOS 20186	Fundamentals of Genetics	BIOS 20187	Bayesian Analysis and Principles of Statistics	STAT 30210
	Applied Linear Statistical Methods	STAT 34300	Statistical Theory and Methods II	STAT 24500		
	Introduction to Scientific Computing for Biologists.	ECEV 32000	Theoretical Ecology	ECEV 42900		
STATISTICAL GENETICS	Statistical Theory and Methods	STAT 24200	Fundamentals of Computational Biology: Models and Inference	HGEN 48600	Fundamentals of Computational Biology: Algorithms and Applications	HGEN 48800
	Human Genetics I	HGEN 47000	Introductory Statistical Genetics	HGEN 47100	Human Variation & Disease	HGEN 46900
	Genetic Analysis of Model Organisms	MGCB 31400	Principles of Population Genetics I	ECEV 35600	Genomics and Systems Biology	HGEN 47300
	Fundamentals of Cell and Molecular Biology	BIOS 20186	Fundamentals of Genetics	BIOS 20187	Statistical Genetics	STAT 35500
	Applied Linear Statistical Methods	STAT 34300	Statistical Theory and Methods II	STAT 24500	Pattern Recognition	STAT 24610
	Introduction to Scientific Computing for Biologists.	ECEV 32000	Multivariate Statistical Analysis: Applications and Techniques	STAT 32950	Bayesian Analysis and Principles of Statistics	STAT 30210
					Machine Learning	STAT 37710
COMPUTATIONAL GENOMICS	Statistical Theory and Methods	STAT 24200	Fundamentals of Computational Biology: Models and Inference	HGEN 48600	Fundamentals of Computational Biology: Algorithms and Applications	HGEN 48800
	Human Genetics I	HGEN 47000	Introductory Statistical Genetics	HGEN 47100	Quantitative Analysis of Biological Dynamics	MGCB 32000
	Genetic Analysis of Model Organisms	MGCB 31400	Principles of Population Genetics I	ECEV 35600	Human Variation & Disease	HGEN 46900
	Fundamentals of Cell and Molecular Biology	BIOS 20186	Fundamentals of Genetics	BIOS 20187	Genomics and Systems Biology	HGEN 47300
	Applied Linear Statistical Methods	STAT 34300	Statistical Theory and Methods II	STAT 24500	Pattern Recognition	STAT 24610
	Computational Systems Biology	CMSC 37720	Multivariate Statistical Analysis: Applications and Techniques	STAT 32950	Bayesian Analysis and Principles of Statistics	STAT 30210
					Gene Regulation	MGCB 35401
					Machine Learning	STAT 37710
COMPUTATIONAL CELL BIOLOGY	Statistical Theory and Methods	STAT 24200	Fundamentals of Computational Biology: Models and Inference	HGEN 48600	Fundamentals of Computational Biology: Algorithms and Applications	HGEN 48800
	Genetic Analysis of Model Organisms	MGCB 31400	Evolution of Biological Molecules	ECEV 31100	Quantitative Analysis of Biological Dynamics	MGCB 32000
	Fundamentals of Cell and Molecular Biology	BIOS 20186	Fundamentals of Genetics	BIOS 20187	Biophysics of Biomolecules	BCMB 32200
	Applied Linear Statistical Methods	STAT 34300	Statistical Theory and Methods II	STAT 24500	Genomics and Systems Biology	HGEN 47300
	Computational Systems Biology	CMSC 37720			Pattern Recognition	STAT 24610
				Bayesian Analysis and Principles of Statistics	STAT 30210	
				Gene Regulation	MGCB 35401	

THE ABOVE COURSE TRACK IS SUGGESTED. THE COMMITTEE ON GENETICS ENCOURAGES ALL STUDENTS TO EXPLORE OTHER AREAS OF INTEREST AS WELL.

TO SATISFY THE COURSE REQUIREMENTS FOR THE COMMITTEE ON GENETICS, STUDENTS ARE TO TAKE: 3 REQUIRED COURSES, 3 CORE ELECTIVES PLUS 2 ADDITIONAL ELECTIVE, AND 2 GRADED LAB ROTATIONS FOR ½ CREDIT EACH, TOTALING 9 GRADED COURSES. ROTATIONS ARE DONE IN THE WINTER OR SPRING (10 WEEKS) AND SUMMER (5 WEEKS). AN OPTIONAL THIRD ROTATIONS (5 WEEKS) MAY BE DONE IN THE SUMMER

STAT 24200 Statistical Theory and Methods (Autumn); HGEN 48600 Fundamentals of Computational Biology: Models and Inference (Winter); HGEN 48800 Fundamentals of Computational Biology: Algorithms and Applications (Spring)

CHOOSE THREE OF THE FOLLOWING BLUE ITALICIZED COURSES BELOW TO SATISFY THE THREE CORE ELECTIVES

HGEN 47000 Human Genetics I; MGCB 31400 Genetic Analysis of Model Organisms; ECEV 35600 Population Genetics I; HGEN 31100 Evolution of Biological Molecules ; BCMB 32200 Biophysics of Biomolecules ; HGEN 46900 Human Variation and Disease ; HGEN 47300 Genomics and Systems Biology; MGCB 32000 Quantitative Analysis of Biological Dynamics

SUGGESTED ELECTIVES FROM WHICH TO CHOOSE

UPDATED SEPTEMBER 2020